Ronald L. Obrey, Jr.
v.
Hansford T. Johnson, in his capacity
As Acting Secretary of the Navy

Civil No. 02-00033 HG-LEK

Report of Gary R. Skoog, Ph.D.

May 17, 2005

EXHIBIT B

Introduction

Pursuant to Rule 26 of the Federal Rules of Civil Procedure, the following constitutes my preliminary report in this litigation.

I. Qualifications

My qualifications are described in my Curriculum Vitae, which is attached as Appendix "1".

II. Assignment

I have been asked by counsel representing the Acting Secretary of the Navy to examine the statistical methodology used by Mr. James E. Dannemiller ("Dannemiller") relating to the statistical analyses he performed in his declaration of May 14, 2003 and report of February 19, 2003. Mr. Dannemiller served as plaintiff's expert. I have been asked to offer my comments and opinions with respect to Mr. Dannemiller's conclusions, opinions and methodology, but not to undertake my own independent statistical study. Such a study would include additional data described below.

I received from counsel an Excel spreadsheet prepared by Mr. Dannemiller, and have formed my opinions from methodological considerations and the analysis of his dataset. I have not thoroughly checked its entries for accuracy against the data supplied by the Navy, nor completely for internal consistency, but I have spot checked it. I have neither asked for nor received the kinds of additional information which would be necessary, in my opinion, to conclude that the evidence in this case requires rejection of the null hypothesis that the Navy (cf. point 12 below) did not discriminate in its hiring selections.

In addition to the opinions expressed in this Report, I am told that I may be asked to render additional opinions within my expertise in a deposition and/or in a trial, as well as in response to any supplemental report(s) or testimony given by plaintiff's expert(s), if any.

My opinions are contained in this prose, along with a one page Appendix which displays the cases I analyzed and shows the value of the chi-squared test statistic in each case individually.

III. Opinions and Bases

1. Mr. Dannemiller's analysis does not articulate any formal statistical model, and thereby does not comport with the methodology commonly used by statistical or econometric experts. By a model I mean the specification of the process by which the data populating the cells of his four two by two contingency matrices was generated. The cells might have come as realizations of a Poisson process, or as draws from two binomial distributions, or from multinomial sampling. Thus, no likelihood function, the beginning of all statistical analysis, can be written down.

2. Because of the point made in 1. above, to proceed, I am left to conjecture a statistical model that he may have had in mind. To the extent that I have guessed incorrectly, I reserve the right to supplement my opinions within a reasonable time period of learning of such a model specification.

3. The most likely candidate for the model Mr. Dannemiller may have had in mind is the testing the equality of means from two binomial distributions. Such a model could be tested in large samples by using Mr. Dannemiller's 2 by 2 contingency tables' Pearson test statistic. I show that this model, while it may occur in statistics textbooks, is inappropriate to use in his Figures 1, 2, 3 and 4 because it will be shown that this statistical model is inconsistent with the underlying process which generated the data. In addition to this being bad statistics, it is inconsistent with subject matter considerations generally, which require that the statistical model comport as nearly as possible with the realistic processes.

4. Mr. Dannemiller points out at page 4 of his report that the Pearson test goes back to 1900. He does not point out that Karl Pearson (1900), the test's originator, claimed that his test statistics, relied on by Mr. Dannemiller, had the $\chi^2(3)$ (read: chi-squared with 3 degrees of freedom) distribution. In fact, the correct distribution, as proved by R.A. Fisher (1922, 1924), was $\chi^2(1)$, chi-square with one degree of freedom. Fortunately for Mr. Dannemiller , the computer package he chose was aware of, and corrected this historic mistake. In fact, the Pearson test statistic's distribution is asymptotic, meaning that it has the claimed properties in "large" samples. In 1934, Yates proposed a "continuity corrected" version of the Pearson test, which I use in this paper when I report a test statistic on any such 2 by 2 contingency table. Mr. Dannemiller's purchased SPSS software in fact reports this statistic, known as the Yates statistic, as well as the results of the classic likelihood ratio (LR) and Fisher exact tests, which appear in his report but about which he says nothing.

5. Mr. Dannemiller's data set contains 159 cases from a "first list" and 11 cases from a "second list" 170 cases in all, including data on 1112 individual selection candidates for various grade 13, 14 and 15 positions. Of these, there was no selection made in 8 cases, for which 45 individuals applied. I showed data on race lacking for 51 individuals, while Mr. Dannemiller indicated 33 such missing observations. Mr. Dannemiller reports the results of 4 "tests of independence" covering 710, 624, 752 and 1054 persons. Since there is substantial overlap of these individuals, these tests are not themselves independent

statistically; it would be more appropriate to devise multiple tests, if he wishes to report such, over non-overlapping sets of individuals. The methodological points I make in this report apply to each and every one of his tests, and for expositional purposes I will focus on his Figure 2.

In several of these 170 selections (also referred to as cases), there were as many candidates selected as there were positions open, usually one but sometimes more than one; these were eliminated from my study, since no discrimination is possible in the selection involved in such cases (although Mr. Dannemiller's figure 1 attempts to test the selection into these cases). Additionally, in 23 cases no whites applied, so these cases were eliminated; again, no selection discrimination is possible – a non-white must get the position. In case #124 (using Mr. Dannemiller's data and numbering throughout) , two whites and no non-whites applied, so it too was eliminated.

Like Mr. Dannemiller, I focus on those cases where one or more whites were competing with one or more non-whites, someone was selected, and we had complete data on the race of all candidates. I identified 58 such cases involving 634 persons. My attempt was to exposit my conclusions by replicating Mr. Dannemiller's Figure 2 analysis. I identified the same number of selections, 63, as appear in Mr. Dannemiller's report. We differed slightly on the details – I had 27 white selections, he had 25, and I had 36 non-white selections while he had 38. I had 128 whites not being selected, while he had 111. I had 443 non-whites not being selected while he had 450. In all, 634 people appear in my analysis, while 624 appear in his. Since he did not list the cases he used, I cannot at this time check this minor discrepancy; in any event it is not the main focus of my report or opinions.

There are various additional data discrepancies which I note here. For example, in 13 cases, the data entered for the successful candidate included a value of *nwht* the number of whites in the pool, as well as *noapp*, the total number of applicants in the pool, from which the number of non-whites may be calculated. However, there was missing race data in one or more of the associated individual records for the unsuccessful candidates, so one wonders how the data on the counts of the numbers of whites and non-whites could have been performed. Such cases were excluded in my analysis.

The results of the process I described, when the 58 cases selected are combined or pooled into a table like Mr. Dannemiller's Figure 2, are:

Applicants for One or Several Positions
One or More Whites and One or More Non-Whites in the Competition
Competing for Positions that Was Filled

	Selected		Not Selected	Totals
Non-Whites	36	<	443	479
Whites	27	<	128	155
Totals	63	>	571	634

Mr. Dannemiller's calculation of a Pearson (or any other) test on this pooled, aggregated or collapsed contingency table implicitly assumes that each of the 634 candidates had the same probability of selection. If all of the selections had involved the same number of openings (generally one, but not always) and had involved the same number of applicants (or if the applicants were always the same fraction of the number of openings), and if the white and non-white applicant pools were equally qualified, this would be an acceptable statistical procedure.

6. Examination of the data reveal that the number of candidates for selection in our study ranged from 2 to 30. Consider the first of these, case #7. There 3 whites competed against 9 non-whites, and a (Japanese) non-white was chosen. The implicit and required assumption for Dannemiller's methodology to be valid in the analysis of this first case considered in isolation is that each candidate had a 1/12 of 8.33% chance of winning. In the next case #8, 1 white competed against 8 non-whites, and a (Filipino) non-white won. For this case in isolation, the implicit required assumption for Dannemiller's methodology is that each of these 9 candidates had a 1/9 of 11.1% chance of winning. Now the probabilities in cases #7 and #8, 8.33% and 11.1%, are already necessarily different, so long as the number of applicants varies. In case #153, each candidate had a 3.33% chance – even more discrepant. His statistical model assumes, on the contrary, that the probability of each candidate in case #7, case #8, and every other case has the same chance of winning, which his methodology would take to be 63/664 or 9.94% (or with his data set, 63/624 = 10.1%). As we have seen, this is logically impossible. Mr. Dannemiller's tests are thus incorrectly statistically specified, and his conclusions correspondingly become suspect.

This observation applies to his Figures 2, 3 and 4, which analyze the results of outcomes, given that candidates had been considered for selection. His Figure 1 cross classifies whites and non-whites by whether they found themselves in a non-competitive selection or in a competitive selection. There is no natural pool that was present previously about which we may think about this selection decision. No pattern or practice is specidied or articulated by which people are supposedly "assigned" to pools, and, indeed, the variable *mid* in the database, which neither Mr. Dannemiller nor I used, indicates that some positions were filled from within and some from without the hiring unit. The fact that Mr. Dannemiller has not specified a statistical model makes this hypothesis test virtually uninterpretable. I reserve my right to comment and supplement if he articulates a model. Mr. Dannemiller appears to conceptualize there being one large grouping of all of the non-competitive selections, *NC* say and the complementary grouping of all of the competitive selections, *C* say, with probabilities p_w and p_{nw}, respectively, that each white and each non-white were selected for *C*., Since the selection process is completely un-specified, it is hard to proceed. We could consider the non-competitive selections of case #1, for a supervisory nuclear engineer at grade 13, case #52, a supervisory nuclear engineer at grade 14 and case #61, a production resources manager, grade 15. What sense does it make to consider a model in which each white had the *same* probability p_w of

having been chosen for each of these three positions and each non-white had a (potentially different) probability p_{nw} of having been chosen for each of these positions? Common sense would suggest that those in consideration for a grade 15 position would be grades 14 or 15, and have no interest in a grade 13, and be given no such consideration. The probabilities will not be the same for any individual, and it makes no sense to take the next step and attempt to compare nonexistent probabilities across groups.

7. I return to the core of Mr. Dannemiller's opinions, Figures 2-4. In fact, we have seen that case #7 gives rise to a 2 by 2 contingency table, which we might index by the triple (1,12,3) to reflect three additional pieces of information which distinguishes it from other tables generally: there would be 1 successful candidate (the first element), there were 12 candidates (the second co-ordinate), and 3 of them were white (the third co-ordinate). Thus, Mr. Dannemiller's database consists of a family of 2 by 2 tables, each indexed by a triple (*numsel, noapp, nwht*). In the next case #8 is another 2 by 2 table, with additional parameters or triple (1,9,1). Continuing, there are 58 different 2 by 2 tables. The statistical structure of the problem is a multidimensional table of size 2 by 2 by 58. The approach taken by Mr. Dannemiller is to collapse this multidimensional table to a single 2 by 2 table. Collapsing generally involves a loss of information. His approach is in general not statistically permissible without additional conditions in place. Mr. Dannemiller did not state any such conditions, nor did he check for the presence of any conditions which would validly permit him to perform this aggregation. Consequently, his analysis, even on this best case scenario, is unjustified, and should correspondingly be given little weight. This point is elaborated upon below, after indicating the kinds of paradoxes which can happen when unbalanced designs are encountered.

8. The contingency table literature contains examples, some of which have arisen in lawsuits, which show the counter-intuitive results that can come from failing to make sure that aggregation is permissible. The phenomenon is now known as *Simpson's Paradox*, after E.J. Simpson's 1951 paper. The following example is loosely based on a discrimination suit that was brought against the University of California, Berkeley described in Bickle *et al.*(1975). It is presented by Gary Malinas of the University of Queensland and John Bigelow of Monash University at (http://plato.stanford.edu/entries/paradox-simpson/).

"Suppose that a University is trying to discriminate in favor of women when hiring staff. It advertises positions in the Department of History and in the Department of Geography, and only those departments. Five men apply for the positions in History and one is hired, and eight women apply and two are hired. The success rate for men is twenty percent, and the success rate for women is twenty-five percent. The History Department has favored women over men. In the Geography Department eight men apply and six are hired, and five women apply and four are hired. The success rate for men is seventy-five percent and for women it is eighty percent. The Geography Department has favored women over men. Yet across the University as a whole 13 men and 13 women applied for jobs, and 7 men and 6 women were hired. The success rate for male applicants is greater than the success rate for female applicants.

	Men		Women
History	1/5	<	2/8
Geography	6/8	<	4/5
University	7/13	>	6/13

How can it be that each Department favors women applicants, and yet overall men fare better than women? There is a 'bias in the sampling', but it is not easy to see exactly where this bias arises. There were 13 male and 13 female applicants: equal sample sizes for both groups. Geography and History had 13 applicants each: equal sample sizes again. Nor does the trouble lie in the fact that the samples are small: multiply all the numbers by 1000 and the puzzle remains. Then the reversal of inequalities becomes fairly robust: you can add or subtract quite a few from each of those thousands without disturbing the Simpson's Reversal of Inequalities.

The key to this puzzling example lies in the fact that *more women are applying for jobs that are harder to get.* It is harder to make your way into History than into Geography. (To get into Geography you just have to be born; to get into History you have to do something memorable.) Of the women applying for jobs, more are applying for jobs in History than in Geography, and the reverse is true for men. History hired only 3 out of 13 applicants, whereas Geography hired 10 out of 13 applicants. Hence the success rate was much higher in Geography, where there were more male applicants."

Men

	Accepted		Rejected
History	1	<	4
Geography	6	<	2
University	7	>	6

Women

	Accepted		Rejected
History	2	<	6
Geography	4	<	1
University	6	>	7

In the tables above, men applying to history comprise 5 of the total of 13 applicants, or 38.46%. If the tables were balanced, men applying to geography would represent this same percentage. In fact, 8 of the 13 or 61.53% of the geography applicants are men, so the table is not balanced.

The troubling example above shows that when the individual contingency tables do not possess "balance" or "homogeneity" the proportions in the totals can give a misleading picture about the underlying structure, and can even reverse it. The issue goes beyond mere "statistical significance" – the small sample sizes in the sample above are not

statistically significant, but if scaled up by a large enough factor they would be significant.

9. I have performed chi-squared tests on each of the 58 individual selection decisions involving at least one white and at least one non-white candidate, for which complete race data was available, and for which a selection was made. None of these individual selections proved to be statistically significant at the 5% level. My appendix shows the Pearson continuity-corrected or Yates (1934) test statistic in each case.

10. Mr. Dannemiller pools or combines the individual tests mentioned above. Let us return to the first two such tests, cases 7 and 8, and display the data:

Case 7

	Number Selected	Number Not Selected	Row Totals
Non-Whites	1	6	7
Whites	0	3	3
Column Totals	1	9	10

Case 8

	Number Selected	Number Not Selected	Row Totals
Non-Whites	1	7	8
Whites	0	1	1
Column Totals	1	8	9

Mr. Dannemiller's procedure would pool these tables (and all others) by adding the entries:

Cases 7 and 8 Pooled

	Number Selected	Number Not Selected	Row Totals
Non-Whites	2	13	15
Whites	0	4	4
Column Totals	2	17	19

Now it is recognized in the statistical literature that one cannot generally do this. I offer two references, but many could be given. Everitt (1977) p. 26 writes "This procedure (pooling) is legitimate only if corresponding proportions in the various tables are alike. Consequently, if the proportions vary from table to table, or we suspect that they vary, this procedure should not be used, since the combined data will not accurately reflect the information contained in the original tables." Gart (1992) operationalizes "corresponding proportions" to be a "balanced design" and proves theorems about the estimation properties of the pooled estimator, relating it to the underlying structural parameter of

association which Dannemiller is trying to estimate. In other words, for Dannemiller's pooling estimates to make statistical sense, he needs some justification, presumably along the lines suggested by these authors. We next check whether this justification is present in the data in this case in the first 2 tables above.

Comparing the number of case 7 non-whites to the total of non-whites, we have 7/(7+8) or 7/15 = 46.67% of the total non-whites are in case 7. Gart's balanced design definition requires that this same percentage of all whites be present in case 7. However, the percentage of all non-whites present in case #7 is 3/(3+1) or 75%. Thus, the balanced design is lacking across just the first of the two tables. Since the condition must hold for all of the tables which are pooled, it is clear that there is no chance for the Dannemiller procedure to be justified.

10. Thus, even if Mr. Dannemiller could find a way to validly combine, say, the grade 13 applicants into a total, there is no guarantee that the result would be statistically significant or economically significant. His statistical procedure is more extreme still: he additionally combines the grade 13, 14 and 15 selection decisions into a giant pool. This requires additional and further aggregation conditions, of which he has none. Additionally, selection into these grades is qualitatively very different; there are fewer opportunities as one goes from grade 13 to grade 14 to grade 15, the decisions are made differently, by different decision-makers (or groups thereof), and the competition for the positions increases in light of their relative scarcity.

11. The contingency table associated with the plaintiff's selection decision is:

Ronald L. Obrey's Case

	Number Selected	Number Not Selected	Row Totals
Non-Whites	0	3	3
Whites	1	6	7
Column Totals	1	9	10

Here, since 7 of the 10 applicants were white, the chance that a white will be selected assuming, as the Dannemiller analysis does, *arguendo* that all candidates are equally qualified, is 70%. That a white was chosen was to be expected, and hardly constitutes evidence of discrimination. In fact, test statistic is only .21, and it would need to be 3.84 to rise to the level of rejection of the null hypothesis.

12. Even if all of the previous statistical difficulties could be overcome, there remains a gaping problem with the Dannemiller statistical analysis. It completely omits any consideration of the many valid determinants of selection such as education (including advanced degrees), measures of experience (including responsibility and breadth of background) and performance (productivity ratings, any job measurements, and/or supervisory ratings) of the candidates. By assuming that all minimally qualified

applicants were equally likely to have been selected, or that the distribution of valid determinants was equally distributed across each applicant pool, the statistical model Mr. Dannemiller analyzed differs from both the way the decisions were legitimately made and common experience. The Navy is choosing the *best* candidate, and not merely selecting a candidate at random, as if drawing a ball from an urn. The selection process would be expected to be sequential, focusing on a subset of those candidates passing a first screening. In Mr. Obrey's case, I am told that the successful candidate had an MBA, while Mr. Obrey had a community college degree. By not incorporating such *bona fide* and non-discriminatory variables into the analysis, the statistical analysis becomes so suspect that it should be given very little weight. Were I to have undertaken such a study, I would have included these data in my analysis.

IVa. Non-Statistical References

1. James E. Dannemiller's "A Report of Results of Statistical Analysis of Hiring Data Provided by Pearl Harbor Naval Shipyard," Prepared by SMS Research and Marketing, February 19, 2003.

2. Excel spreadsheet file produced by counsel from 1.

3. Declaration of James E. Dannemiller of May 14, 2003 including interrogatory responses (21 pages), Federal defendant Gordon R. England's second amended responses to plaintiff's first request for interrogatories, including bates 01360-01383, chart of underlying employment data, , 35 pages of Mr. Dannemiller's spreadsheet printout, un-numbered pages of Mr. Dannemiller's SPSS program output.

4. Federal defendant Gordon R. England's responses to plaintiff's first request for interrogatories

5. Conversations with counsel about the hiring framework.

IVb. Statistical References

Bickel, P. J., Hjammel, E. A., and O'Connell, J. W., 1975, "Sex Bias in Graduate Admissions: Data From Berkeley", *Science* 187: 398-404.

Everitt, B.S., *The Analysis of Contingency Tables,* London: Chapman and Hall, 1977. 1987).

Fisher, R.A., "On the interpretation of chi-square from contingency tables, and the calculation of P," *Journal of the Royal Statistical Society,* vol. 85, (1922), pp. 87-94.

Fisher, R.A., "The conditions under which chi-square measures the discrepancy between observation and hypothesis," *Journal of the Royal Statistical Society,* vol. 87, (1924), pp. 442-450.

Fisher, R.A., 1934, (1970, 24th edition.), *Statistical Methods for Research Workers.* (originally published in 1925) Edinburgh: Oliver and Boyd.

Fisher, R.A., 1935, *The Design of Experiments.* (8th edition, 1966) Edinburgh: Oliver and Boyd.

Malinas, Gary and John Bigelow, http://plato.stanford.edu/entries/paradox-simpson/.

Gart, John G., "Pooling 2 x 2 Tables: Asymptotic Moments of Estimators", *Journal of the Royal Statistical Society, Series B,* vol. 54(2), 1992 pp. 531-539.

Pearson, K., 1900, "On a criterion that a given system of deviations from the probable in the case of a correlated system of variables is such theat it can reasonably be supposed to have arisen from random sampling", *Philos. Mag., Series 5, 50:* p. 157-175

Pearson, K., 1922, "On the Chi-squared test of goodness of fit", *Biometrika 14,* pp. 186-191.

Simpson, E.H., 1951, "The interpretation of interaction in contingency tables", *Journal of the Royal Statistical Society*, Series B, 13: 238-241.

Yates, F., 1934, "Contingency tables involving small numbers and the chi-square test", *Journal of the Royal Statistical Society, Supplement* 1, p. 217-235.

V. Compensation

In connection with my providing consulting services for the Defendants in this litigation, including my efforts in the preparation of this Report and my time in rendering testimony, my time is being billed as follows:

1. For time spent in study, preparation of Report, etc.: $250 per hour;
2. For additional consulting services: $250 per hour;
3. For time spent in giving testimony in a deposition, including preparation: $250 per hour;
4. For time spent in giving trial testimony, including preparation: $250 per hour.

VI. Publications (preceding ten years)

See my curriculum vitae, Appendix "1" hereto.

VII. Prior Expert Witness Testimony (preceding 4 years)

See Appendix "2" hereto.

VIII. Data Used in My Analysis of 68 Cases

See Appendix "3" hereto.

Dated: Glenview, Illinois
May 17, 2005

Gary R. Skoog, PhD

Dr. Gary R. Skoog

Appendix "3"

[illegible]	[illegible]	[illegible]	[illegible]	mox	numsel	[illegible]	anyind	[illegible]	Non-Whites Selected	Nonwhites Not Selected	Whites Selected	Whites Not Selected	[illegible]
7	1	12	1	5	1	3	0	7	1	8	0	3	0.3636
8	1	9	1	3	1	1	0	19	1	7	0	1	1.7227
9	1	3	1	1	1	2	0	28	0	1	1	1	0.1875
10	1	4	1	5	1	1	0	31	1	2	0	1	0.4444
13	1	4	1	3	1	1	0	42	1	2	0	1	0.4444
14	1	14	1	1	1	4	0	46	0	10	1	3	0.2423
15	1	13	1	5	1	2	0	60	1	10	0	2	0.9972
16	1	14	1	5	1	2	0	73	1	11	0	2	1.1218
17	1	11	1	5	1	1	0	87	1	9	0	1	2.2275
22	1	9	1	11	1	1	0	137	1	7	0	1	1.7227
25	1	16	1	1	1	2	0	148	0	14	1	1	1.3714
26	1	16	1	1	1	1	0	164	0	15	1	0	3.4844
27	1	20	1	5	1	3	0	180	1	16	0	3	1.0114
28	7	11	1	1	1	1	0	206	0	10	1	0	2.2275
29	2	16	1	1	1	2	0	212	0	14	1	1	1.3714
30	1	7	1	1	1	2	0	227	0	5	1	1	0.2625
34	1	7	1	9	1	1	0	238	1	5	0	1	1.2153
39	1	13	1	2	1	1	0	266	1	11	0	1	2.7309
41	1	7	1	5	1	1	0	280	1	5	0	1	1.2153
44	1	4	1	1	1	1	0	292	0	3	1	0	0.4444
54	2	2	1	5	1	1	0	315	1	0	0	1	0.0000
64	1	25	1	5	1	5	0	328	1	19	0	5	0.5859
65	1	24	1	5	1	5	0	353	1	18	0	5	0.5382
66	7	24	1	3	2	5	0	383	2	17	0	5	0.0230
70	4	4	1	5	1	1	0	407	1	2	0	1	0.4444
71	21	21	1	2	1	6	0	428	1	14	0	6	0.2363
74	19	27	1	1	1	5	0	459	0	22	1	4	0.6821
75	10	11	1	1	1	2	0	477	0	9	1	1	0.7486
76	2	5	1	1	1	2	0	480	0	3	1	1	0.0521
79	1	4	1	3	1	1	0	489	1	2	0	1	0.4444
82	4	9	1	11	1	1	0	500	1	7	0	1	1.7227
84	2	8	1	9	1	1	0	508	1	6	0	1	1.4694
86	1	4	1	1	1	3	0	516	0	1	1	2	0.4444
89	5	5	1	5	1	2	0	555	1	2	0	2	0.0521
90	6	17	1	1	1	11	0	561	0	6	1	10	0.1006
92	1	2	1	1	1	1	0	574	0	1	1	0	0.0000
105	4	7	1	2	1	2	0	598	1	4	0	2	0.2625
107	5	9	1	1	1	2	0	614	0	7	1	1	0.5022
109	5	13	1	1	2	4	0	644	1	8	1	3	0.0369
110	4	13	1	1	1	5	0	656	0	8	1	4	0.0609
111	4	21	1	3	4	8	0	669	1	12	3	5	1.2479
113	10	15	1	5	1	1	0	706	1	13	0	1	3.2334
115	1	8	1	1	1	3	0	714	0	5	1	2	0.0762
121	1	3	1	4	1	1	0	732	1	1	0	1	0.1875
128	1	9	1	2	1	1	0	765	1	7	0	1	1.7227
129	1	4	1	3	1	1	0	774	1	2	0	1	0.4444
134	1	5	1	5	1	1	0	792	1	3	0	1	0.7031
149	4	7	1	2	1	2	0	863	1	4	0	2	0.2625
151	2	3	1	9	1	1	0	876	1	1	0	1	0.1875
152	2	4	1	1	1	2	0	879	0	2	1	1	0.0000
153	15	30	1	1	1	7	0	896	0	23	1	6	0.4112
154	10	16	1	1	1	4	0	921	0	12	1	3	0.3556
159	10	15	1	5	1	2	0	996	1	12	0	2	1.2466
1001	8	10	1	1	1	7	0	1009	0	3	1	6	0.2116
1006	14	23	1	1	1	12	1	1053	0	11	1	11	0.0020
1009	4	5	1	1	1	2	0	1099	0	3	1	1	0.0521
1010	6	7	1	5	1	1	0	1106	1	5	0	1	1.2153
1011	4	5	1	5	1	1	0	1111	1	3	0	1	0.7031
Totals									36	443	27	128	

Notes:

1 = Caucasian

2 = Chinese

3 = Filipino

4 = Hawaiian

5 = Japanese

9 = OPI (Other Pacific Islander)

10 = Vietnamese, Korean, Guamanian, Black

11 = Hispanic